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COOPERATIVE EXTENSION WORK IN AGRICULTURE AND HOME ECONOMICS

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THE USE OF THE STEAM PRESSURE CANNER IN COOKING

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Besides being one of the most dependable devices for the canning of non-acid vegetables, and a very reliable one for the home canning of meats and fish, the steam pressure canner may be used in the cooking operations of the home throughout the year with a saving of much time and fuel. By utilizing the steam pressure canner as a cooker in the preparation of the daily meals, an appreciable saving of fuel (or money) may be effected.

The construction of the steam pressure canner or cooker is based upon the principle that the temperature at which water boils depends upon the amount of pressure exerted upon it, and increases when the pressure increases. For example, at sea level water boils in an open vessel (that is, under atmospheric pressure) at 212° F. At 5000 feet above sea level, where the air pressure is noticeably less, it boils at a considerably lower temperature, i. e., at 203° F. By increasing the pressure upon the water above that of the atmosphere at sea level, it will not boil until the temperature rises above 212° F. By confining water in a tightly closed vessel, such as the steam pressure cooker, and continuing to apply heat, the pressure of the steam becomes greater and the boiling point of water continues to rise. The pressure cooker is equipped with a dial which registers the amount of steam pressure.

At 5 lbs. steam pressure	the boiling point of water is	228° F.
At 10 "	"	240° F.
At 15 "	"	250° F.
At 20 "	"	259° F.

Foods cooked in steam at these high temperatures become tender much more rapidly than ordinarily, since the connective tissues of meat and the fibrous parts of vegetables are more quickly disintegrated. Consequently, the cheaper cuts of meat, dried beans and peas and those cereal preparations which usually call for long slow cooking, may be prepared in a relatively short time in the pressure cooker.

Advantages

Saves time: Owing to the greatly reduced cooking period for all articles prepared in the cooker there is an appreciable saving of the housewife's time. After the preliminary preparation of vegetables, the actual cooking requires very little time.

Saves labor: There is no danger of foods sticking or burning, hence the housewife does not need to spend time in stirring or basting food. When once placed in the cooker with sufficient water in the bottom no further attention is needed except to maintain the required pressure.

Saves fuel: After bringing the contents of the cooker up to the boiling point at the desired pressure, very little heat is required to maintain this pressure.

Saves heat: Since so little heat is needed to maintain a given pressure and the cooking is completed in a comparatively short time, the kitchen will be noticeably cooler in warm weather than with the ordinary method of cooking.

Saves food value: In the steam pressure cooker, as in an ordinary steamer, it is very easy to cook meats and vegetables by steam alone or with very little water and retain all the extractive material to be served with the article prepared. With care this may be done even with the ordinary methods of cooking. However, since there is usually great danger of scorching foods when very little water is used, vegetables are too often cooked in an abundance of water, which is later thrown away although it holds in solution valuable mineral matter and vitamines so essential in our diet. When meats are cooked the extracted juice, which is left as a concentrated stock, should be utilized either as gravy or to serve as the basis of a soup for a subsequent meal.

Obviates odor of cooking: Owing to the cooker being tightly closed during the cooking process there will be an entire absence of odor until the petcock is opened and the cover taken off when the food is ready to be removed. Even this may be avoided with onions, cabbage, and other foods with undesirable odors, by placing the cooker on the porch or in an open window before opening the petcock or removing the lid.

Best Way To Use Cooker

The most efficient and satisfactory way of using the cooker is to prepare as many as possible of the articles required for the meal at one time. By planning the meal in advance, estimating the time required for the various articles, preparing them for cooking, so that each may be introduced into the cooker at the proper time (or several at once), much time, labor and fuel may be saved. The meat will usually require the longest time. If two or more vegetables, such as potatoes, carrots, or turnips, which require 10 to 15 minutes (depending upon age of vegetables and degree of pressure used), are to be prepared, place them in the cooker about 15 minutes before the meat is expected to be ready. While they are cooking, cream sauce for the vegetables may be made, the salad dressing prepared and other preparations for serving the meal completed. If steamed puddings or Boston brown bread are desired, they should be prepared before the main part of the meal, since all doughs need to be cooked without pressure until set, then are finished in a short time under pressure. Baked beans may very well be prepared at the same time as brown bread or pudding.

This planning of meals in advance, with due regard to proper balancing of the diet as well as attractive combinations, is effective in promoting health and better standards of living. A few suggestive menus are given to

illustrate combinations of food which may in most cases be cooked at the same time.

It is impossible, of course, to do more than estimate the time required for every article, since the age and size of the piece of meat, the amount of bone it contains, the freshness and age of vegetables, and the amount of material in the cooker must all be taken into consideration. Until the house-wife has had sufficient experience to judge reasonably accurately, it may be well to try the shorter period recommended, and to allow more time when upon examination the food is found not to be sufficiently tender.

Precautions To Be Observed In The Use Of The Pressure Cooker

Before attempting to remove the lid of the cooker be sure that the pointer of the dial is at zero. It may be allowed to return to zero very slowly by simply removing the source of heat (putting out the flame or removing the cooker to the back of the stove); or the petcock may be opened very gradually, thereby relieving the pressure. If the petcock is opened care should be taken to open it little by little, and neither hand nor face should be over it lest the escaping steam burn the operator.

If vessels have been covered while in the cooker, remove the lids slowly and carefully since there may be steam under pressure within such vessels, which must be released slowly.

Do not attempt to remove vessels from the pressure cooker too soon after removing the cover, but wait until the greater mass of steam has escaped.

Other Helpful Hints

1. Do not try to remove lid of cooker until the steam has been let out through the petcock and the pointer on the dial is at zero. Then wait a few moments to allow food to cool, since meat especially will be nicer if allowed to absorb some of the juices.

2. Since there should be no evaporation in pressure cooking less water should be used than when cooking by the ordinary method.

3. When cooking puddings, Boston brown bread or anything which requires that the petcock remain open for a time, there must be sufficient water in the cooker (at least well over the rack) to allow for the evaporation that is going on.

4. Several articles may be cooked at the same time by using compartment vessels such as often accompany the fireless cookers at the time of purchase. When these are not on hand, several containers which may be placed one above the other on the rack of the cooker, will serve the purpose. If the meat is not too thick it may be placed on the bottom of the cooker and the rack over it to support the other vessels. There is not much danger of mixing the flavors unless too much water is used, in which case the water and juices may boil over and mix if the steam is let off too suddenly.

5. Do not go away and leave the cooker over a gas or gasoline flame. If obliged to leave turn your pressure cooker into a fireless cooker in the following manner. First heat the food until the desired pressure is reached,

put out the flame, place the cooker on an asbestos mat away from drafts and cover with a fire-proof cloth or cover of some non-conducting material. The cooking will continue and much more rapidly than in the ordinary fireless cooker. When using a coal range the cooker may be drawn to the back of the stove or the fire allowed to die down before the food has been cooked, covering as above stated.

6. If using a coal range it is best to set the cooker directly over the fire until the desired pressure is reached. To avoid the blackening of the cooker it may be advisable to rub the bottom with a little grease before putting it over the fire; when cleaning the cooker a greased cloth will remove most of the soot.

Suggestive Menus

Braised beef
Steamed potatoes Creamed carrots
Salad
Bread Butter
Cereal fruit pudding

Creole chicken
Rice Green peas
Salad
Bread Butter
Steamed pudding

Boiled ham
Potatoes Baked beans
Cold slaw
Boston brown bread Butter
Fruit dessert

Fish with dressing Creole sauce
Creamed peas
Asparagus with drawn butter
Lettuce and tomato salad
Bread Butter
Berries and cream

Recipes

Meats

Creole chicken:

6 tomatoes or 1 No. 2 can tomatoes
3 sweet red peppers cut in small cubes
3 sweet green peppers cut in small cubes, or 1 No. 2 can peppers
1 onion (size of egg)

1 medium-sized chicken
 $\frac{1}{4}$ lb ham or 2 or 3 slices bacon chopped fine
1 tablespoon chopped parsley
1 bay leaf
2 teaspoons of salt
2 tablespoons butter or bacon drippings

Place the chicken either on the rack or on the bottom of the cooker with 1/2 cup water. Let it cook at 15 pounds pressure for 40 to 50 minutes. Reduce the pressure to zero and remove the lid of cooker. Have ready the onion, cut fine and browned ^{in the} fat. Add this with other vegetables and the seasonings to the cooked chicken, close the cooker, bring pressure up and maintain at 15 pounds for 10 minutes. Let pressure run down to zero slowly, remove chicken and vegetables and thicken stock left in cooker to serve with the meat.

Smothered chicken Prepare as for frying. Dredge with flour and brown in hot fat. Season with salt and pepper and transfer browned chicken to rack of cooker, with 1/2 cup water below. Close cooker, bring up to 15 pounds pressure and maintain there for 40 to 60 minutes, depending upon age of fowl. Thicken stock and serve.

Roast chicken Prepare as for roasting in the oven. Place in hot oven with dressing: and brown nicely, then transfer to rack of cooker with 1/2 cup water below. Maintain 10 pounds pressure for one hour or more, depending upon age and size of fowl. Thicken gravy and serve. A lower pressure and longer cooking is preferred when the fowl is left whole.

Braised beef: Select a piece from 3 to 5 pounds in weight from one of the cheaper cuts of beef, such as the rump, shoulder, etc., sear and brown well with 1 tablespoon of fat either in a frying pan or in the bottom of the cooker. If desired, dredge with flour before browning. Transfer to cooker with 1/2 cup water, cover cooker and maintain at 15 pounds pressure one hour or more, depending upon age, size, and shape of cut of beef. If desired, an onion browned in fat or a few carrots or turnips, may be cooked with the meat. Remove stock from cooker, skim off part of the fat and thicken rest for gravy. More tender cuts of beef would require less time.

Whole ham: Wash and soak for several hours a smoked ham (or shoulder). Transfer to cooker, lean side down, add 4 to 6 cups water and maintain at 10 to 15 pounds pressure one hour or more, depending upon size and quality of ham. Test to make sure it is tender before removing from cooker. If desired the ham may be allowed to cool in the liquid, causing the meat to be more juicy. Or it may be removed to a dripping pan, sprinkled with sugar and browned in the oven. Whole cloves, arranged symmetrically, make an attractive garnish.

Smoked beef tongue: Wash and soak for several hours, transfer to cooker, with water to almost cover it. Maintain 15 pounds pressure for one hour or more, depending upon size and age. Reduce pressure slowly and, if desired, allow meat to cool in liquid. Serve hot or cold, garnished with crisp parsley.

Vegetables

Potatoes: Pare, wash, and if large, cut potatoes in halves or quarters. About 10 to 12 minutes before meat is ready to take from cooker reduce pressure, remove cover and place potatoes on top of meat or in vegetable basket above meat. Sprinkle lightly with salt and cook 10 minutes at 15 pounds pressure. If desired they may be browned in fat or served with cream sauce.

Dasheen: Pare and wash dasheens and place in wire basket or shallow vessel in cooker. Sprinkle with salt and use very little water in vessel. Cook 10 to 15 minutes at 15 pounds pressure, depending on size of dasheens. Serve plain with melted butter or with cream sauce, or chill and use for salad.

Sweet potatoes: The process is the same as for white potatoes. Do not cook too tender if they are to be browned in fat afterward.

Carrots: If carrots are young, scrape, wash and place in container with very little water. Sprinkle lightly with salt, cook five minutes with 15 pounds pressure, and serve with melted butter or cream sauce. If carrots are old, scrape and slice or dice them. Parboil five minutes, discard the liquid, season with salt and cook in small amount of fresh water 10 to 12 minutes at 15 pounds pressure. Serve with cream sauce or butter.

Turnips, Peel, wash and quarter or dice them. If old, parboil parsnips, etc: them 5 minutes and proceed as for old carrots. If young proceed as for young carrots. Parsnips may be browned or sauted in butter after cooking.

Beets: Wash, place in container and cover with boiling water. Cook at 15 pounds pressure 12 to 30 minutes, depending upon age and size of beets. Serve hot with butter or cream sauce, or cold with vinegar. Cold beets combined with nuts and mayonnaise dressing, served on a nest of lettuce, make a most attractive and delicious salad.

Fresh string Prepare as usual for cooking. Place in vessel with 1/4 beans or snaps: cup of water and 1 teaspoon salt to every quart of beans. Maintain at 15 pounds pressure for 12 minutes, then remove from fire and let pressure run down to zero without opening petcock. When the pointer has reached zero, open cock, remove lid and take out beans. Serve with cream sauce or butter. If desired, thin strips of fat meat may be placed in the bottom of the vessel and cooked with the beans.

Fresh asparagus: Prepare as usual for cooking. Place in shallow vessel, sprinkle over it 1 teaspoon salt but add no water. Maintain at 15 pounds pressure 8 to 10 minutes, depending upon size and age of stalks. Let pressure run down slowly after removal from fire. Serve with cream sauce or melted butter.

Cabbage: Remove outer leaves and cut head into sections, removing core if very hard. Parboil five minutes if desired and drain. Cover with boiling salted water and cook at 15 pounds pressure 10 to 15 minutes (depending on age). Drain and serve with cream sauce or with melted butter.

Onions: Peel, wash and if large cut them in half; otherwise keep whole. If desired parboil 5 minutes and drain. Place in vessel in cooker with very little water. Sprinkle with salt and cook 10 minutes at 15 pounds pressure.

Dried corn: Wash and soak several hours in water enough to cover. Transfer to cooker with same water, season with salt and keep at 15 pounds pressure 10 minutes.

Dried peas: The process is the same as for dried corn.

Dried soy beans: Soak over night; parboil next day in fresh water for 10 minutes, put into vessel in cooker with seasoning and fresh water to cover. Cook 15 to 30 minutes at 15 pounds pressure, depending upon variety. Easycook and Hahto soy beans require much shorter time for cooking than Mammoth Yellow, etc. Serve with tomato sauce.

Baked beans: Soak one pound (2 cups) dried navy beans over night. Next day parboil 10 minutes in fresh water. Drain and place in vessel to fit cooker with 1/4 pound salt pork on bottom of vessel. Season with 2 teaspoons salt, 1/2 teaspoon mustard and 2 tablespoons or more of sirup, if desired. Add water to almost cover beans. Cook 25 minutes at 20 pounds pressure. If Boston brown bread is being prepared the beans may be cooked with the bread, namely, for 55 minutes with petcock open, followed by 20 minutes at 15 pounds pressure (see Boston brown bread). After cooking, the pan of beans may be placed in the oven for a few minutes to brown.

Soy beans instead of navy beans may be used for baked beans.

Cereals

Rice: Wash rice thoroughly and soak 4 to 5 hours. Put into vessel in cooker with three cups of water and 1 teaspoon salt to every cup of rice. Maintain 15 pounds pressure for 10 minutes.

Macaroni: Wash and place in vessel in cooker, cover with boiling water, salted to taste. Maintain 15 pounds pressure for 10 to 15 minutes. Serve in any desired way.

Cheese sauce, made by adding 1/2 cup grated cheese to 1 cup white sauce before removing from fire, is excellent to serve with macaroni, rice, potatoes or cauliflower.

Bread and Puddings

Boston brown bread: Follow any recipe for brown bread or use the following proportions:

2 cups Graham flour	$\frac{1}{4}$ cup sugar, or $\frac{1}{2}$ cup molasses
1 cup cornmeal	$1\frac{1}{2}$ to 2 cups sour milk
1 teaspoon salt	1 tablespoon shortening
1 teaspoon soda	$\frac{3}{4}$ cup seeded raisins

Place mixture in greased cans with perforated lids, and place on rack of cooker with water up to rack. Cook 55 minutes to 1 hour with petcock open, then close cock and maintain 15 pounds pressure for 20 minutes. Reduce pressure rather slowly. It is necessary to cook doughs without pressure at first to allow time for mixture to rise before putting under pressure.

Steamed pudding:

1 cup chopped suet or	1 cup sour milk
$\frac{1}{2}$ cup beef fat	2 eggs
$\frac{3}{4}$ cup brown sugar	2 $\frac{1}{2}$ to 3 cups flour
$\frac{1}{2}$ teaspoon salt	1 cup seeded raisins
1 teaspoon soda	$\frac{1}{2}$ cup currants or cut citron
	1 cup chopped nuts

Spice: - 1 teaspoon cinnamon $\frac{1}{2}$ teaspoon nutmeg
 $\frac{1}{4}$ teaspoon cloves

Mix and place in greased cans with perforated lids. Cook same as Boston brown bread. Serve with liquid or hard sauce.

Cereal fruit pudding:

1 $\frac{3}{4}$ cups Graham flour or	2 eggs
1 cup flour and $\frac{3}{4}$ cup	$\frac{1}{4}$ cup sour milk
rolled oats	1 cup seeded raisins
$\frac{1}{4}$ cup sugar	1 cup dried apples (or other
$\frac{1}{4}$ cup butter or butter	fruit) soaked previously
substitute	$\frac{1}{2}$ teaspoon soda
$\frac{1}{2}$ teaspoon salt	Spice to taste

Mix and place in greased tins with perforated lids and cook same as Boston brown bread. Serve with liquid or hard sauce.

Fruit cake: Use any good recipe for fruit cake. Place mixture in greased baking powder or coffee cans with perforated lids. Cook on rack 55 minutes to one hour with petcock open, then maintain 10 pounds pressure 30 minutes or 15 pounds for 20 minutes. Let pressure run down very slowly. If desired the cake may be transferred from the cooker to the oven in order to allow the outside to dry more thoroughly. Remove cake from cans and cool thoroughly. When cold wrap in paraffin paper until needed.